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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/785,396	02/23/2004	Walter D. Mieher	KLA1P117X1A/P1151/2	6516
61736	7590	10/20/2006	EXAMINER	
BEYER WEAVER & THOMAS LLP			STOCK JR, GORDON J	
P.O. BOX 70250			ART UNIT	
OAKLAND, CA 94612			PAPER NUMBER	
			2877	

DATE MAILED: 10/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/785,396

Applicant(s)

MIEHER ET AL.

Examiner

Gordon J. Stock

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) 33-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32, 38-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>20050516, 20041108, 20040816</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Species 2 (**claims 2-32** with generic **claims 1, and 38-42**) in the reply filed on August 11, 2006 is acknowledged.
2. **Claims 33-37** are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on August 31, 2006.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on May 26, 2005; November 8, 2004; and August 16, 2004 have been considered by the examiner.

Drawings and Specification

4. The specification is objected to for the following: on page 42 line 7 'modulation device 532' should read -modulation device 552-; on page 43 line 9 'mirror 574' should read -mirror 572-; on page 74 lines 4 and 6 'targets 1008' should read -targets 1008a-1008d-; on page 79 line 10 '152' should read -1152-; on page 82 line 7 the U.S. Provisional Application No. needs to be updated; on page 85 lines 8 and 13 '116' should read -1166-. Corrections required.
5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: **T2** of Fig. 2a.. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application

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must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

6. The drawings and specification are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: **OVL** of Fig. 3b; **502, 503, 504, 505, 506, 508, 509, 510, 512, 514, and 524** of Fig. 5a; **704** of Fig. 7; **1184** and **1188** of Fig. 11f. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

7. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 101

8. 35 U.S.C. 101 reads as follows:

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Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

9. **Claims 1-32, 38-42** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. In **claim 1** the step of using a scatterometry overlay technique to analyze signals to determine an overlay error are abstractions without a tangible result. **Claims 2-32, 38-42** are rejected for depending upon a rejected base claim; wherein **claims 2-32, 38-42** further limiting of the parent claim still does not have a tangible result. Merely 'using a scatterometry overlay technique to analyze signals to determine an overlay error' would not appear to be sufficient to constitute a tangible result, since the outcome of the 'determining' has not been used in a disclosed practical application nor made available in such a manner that its usefulness in a disclosed practical application can be realized. See OG Notices: 22 November 2005, "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility".

Specifically: Part b. *Practical Application the Produces a Useful, Concrete, and Tangible Result* under Section IV *Determine Whether the Claimed Invention Complies with the Subject Matter Eligibility Requirement of 35 U.S.C. Sec. 101*, sentence 3, in the OG Notice from 22 November 2005 states 'In determining whether the claim is for a "practical application," the focus is not on whether the steps taken to achieve a particular result are useful, tangible, and concrete, but rather that the final result achieved by the claimed invention is "useful, tangible, and concrete."'

Double Patenting

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible

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harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. **Claim 1** is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over **claims 1, 13, 14, 15, 21-25 of U.S. Patent Application 10/785,731 (Mieher et al.)**. Although the conflicting claims are not identical, they are not patentably distinct from each other because **claim 1 ('396)** and **claims 1, 13-15, 21-25 ('731)** are both method claims for determining an overlay error comprising using a plurality of periodic targets with predefined offsets via scatterometry techniques employing an imaging optical system.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. **Claims 1, 38-41** are rejected under 35 U.S.C. 102(e) as being anticipated by **Yang et al. (6,982,793)**.

As for **claims 1, 38, 41**, Yang in a method and apparatus for using an alignment target with designed in offset discloses the following: providing targets A, B, C, D that each include a portion of the first and second structures on a first and second layer of a sample (Fig. 15: 252, 254, 256, 258); wherein the target A (Fig. 15: 252) is designed to have a predefined offset, D, between its first and second structures portions (Fig. 15: 252, D); wherein the target B (Fig. 15: 254) is designed to have a predefined offset, -D, between its first and second structures portions (Fig. 15: 254, -D); wherein the target C (Fig. 15: 256) is designed to have a predefined offset, D + d, between its first and second structures portions (Fig. 15: 256, D + d); wherein the target D, (Fig. 15: 258) is designed to have a predefined offset, -D-d, between its first and second structures portions (Fig. 15: 258, -D-d); illuminating the targets A, B, C, and D with EM radiation to obtain spectra Sa, Sb, Sc, and Sd from targets A-D respectively using an imaging optical system (col. 16, lines 38-40; Fig. 26a, col. 17, lines 1-20); determining any overlay error between the first structures and the second structures using linear approximation based on the obtained spectra, linear based technique (Fig. 16: equation 8; col. 16, lines 40-50); a scatterometry module for illuminating the targets thereby a scatterometry overlay technique is used (Fig. 12c: 145; col. 11, lines 50-55; col. 12, lines 20-35); a processor operable for analyzing optical signals, spectra, for determining any overlay error (Fig. 12c: 147 and 148) that uses a

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scatterometry technique (col. 12, lines 20-35); wherein, line images are formed (Fig. 26b from Fig. 26a).

As for **claim 39**, Yang discloses everything as above (see **claim 38**). In addition, he discloses each first structure has a first center of symmetry and each second structure has a second center of symmetry; wherein, the first center of symmetry and the second center of symmetry for each target are offset with respect to each other by a selected one of the predefined offsets (Fig. 24: 700, 702, 704).

As for **claim 40**, Yang discloses everything as above (see **claim 38**). In addition, he discloses determining the overlay error without comparing the optical signals to calibration data (col. 16, lines 50-60).

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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16. **Claims 2, 6, 10, 12-17** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yang et al. (6,982,793)**.

As for **claim 2**, Yang discloses everything as above (see **claim 1**). In addition, he discloses illumination and a lens (Fig. 26a: 804 and 810). He does not explicitly state the illumination and the numerical aperture of the lens are configured to ensure that only zeroth diffraction order is collected. However, the system is a normal incidence reflectometer (Fig. 26a: illuminating normal to the plane of the target), and Yang discloses normal incidence and detection of diffracting light reflected from target (col. 12, lines 5-30). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have the lens numerical aperture and the illumination at an optimal value to ensure that the normal incidence reflectometer system captures solely the zeroth order diffracted light, light reflecting off of the surface normal to incident surface, for greater signal to noise from eliminating non-normal reflected, higher order diffraction orders, from entering the detector.

As for **claim 6**, Yang discloses everything as above (see **claim 2**). In addition, he discloses that a plurality of discrete wavelengths may be used (col. 10, lines 55-60) and that wavelengths may be varied (col. 15, lines 40-45). He does not explicitly state adjusting a wavelength selection device. However, it would be obvious to one of ordinary skill in the art at the time the invention was made to adjust a wavelength selection device in order to vary the wavelengths and to measure at a plurality of discrete wavelengths.

As for **claim 10**, Yang discloses everything as above (see **claim 6**). He is silent concerning a polarizer and an analyzer in the collection path (Fig. 26a). He does teach an analyzer and polarizer in a scatterometer and reflectometer (Figs. 12b and 12c). Therefore, it

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would be obvious to one of ordinary skill in the art at the time the invention was made to have an analyzer and polarizer in order to image two targets simultaneously for ellipsometric measurements.

As for **claim 12**, Yang discloses everything as above (see **claim 2**). In addition, he discloses the measured optical signals are in the form of one or more images (Fig. 26b).

As for **claim 13**, Yang discloses everything as above (see **claim 12**). In addition, the images include center portions of each target and the image center portion of each target is analyzed (Fig. 26a: 802a, 802b; and suggested by imaging of targets of Fig. 24).

As for **claim 14**, Yang discloses everything as above (see **claim 2**). In addition, the overlay error is determined without comparing any of the measured optical signals to a known or reference signal from a sample target having a known overlay error (col. 16, lines 50-60).

As for **claim 15**, Yang discloses everything as above (see **claim 2**). In addition, he discloses each first structure has a first center of symmetry and each second structure has a second center of symmetry; wherein, the first center of symmetry and the second center of symmetry for each target are offset with respect to each other by a selected one of the predefined offsets (Fig. 24: 700, 702, 704).

As for **claim 16**, Yang discloses everything as above (see **claim 2**). In addition, he discloses determining the overlay error without comparing the optical signals to calibration data (col. 16, lines 50-60).

As for **claim 17**, Yang discloses everything as above (see **claim 2**). In addition, Yang discloses determining any overlay error between the first structures and the second structures

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using linear approximation based on the obtained spectra, linear based technique (Fig. 16: equation 8; col. 16, lines 40-50).

17. **Claims 7 and 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yang et al. (6,982,793)** in view of **Shiraishi et al. (5,966,201)**.

As for **claims 7 and 8**, Yang discloses everything as above (see **claim 6**). He is silent concerning a set of band pass interference filters in the path of the illumination source. However, Shiraishi in a mark position detection system teaches having an interference filter in the illumination path for wavelength selection of 550 to 750 nm (col. 8, lines 35-45). Yang discloses wavelength ranges from at least 500 to 700nm (Fig. 4). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have a set of interference filters in the illumination path in order to adjust to discrete wavelengths within the range of 500 to 700 nm.

18. **Claims 7, 9, 19, 29-31** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yang et al. (6,982,793)** in view of **Johnson et al. (5,388,909)**.

As for **claims 7 and 9**, Yang discloses everything as above (see **claim 6**). He is silent concerning a set of band pass interference filters in the path of the illumination source. However, Johnson in a substrate inspection system teaches using a series of interference filters in front of a detector (col. 7, lines 1-10). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have a set of interference filters in front of the detector in order to measure at discrete wavelengths within a range of wavelengths.

As for **claim 19**, Yang discloses everything as above (see **claim 1**). In addition, he discloses a broadband source (Fig. 26a: 804); a detector for detecting a measured signal (Fig.

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26a: 816); wherein using the imaging optical system includes at least one radiation beam towards each target to measure a plurality of measured signals from the periodic targets (Fig. 26a: 802a, 802b). He is silent concerning a filter and adjusting the filter to pass particular wavelengths. However, he discloses that a plurality of discrete wavelengths may be used (col. 10, lines 55-60) and that wavelengths may be varied (col. 15, lines 40-45). And Johnson in a substrate inspection system teaches using a series of interference filters in front of a detector (col. 7, lines 1-10). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have a set of interference filters in front of the detector in order to adjust wavelengths to measure at discrete wavelengths within a range of wavelengths.

As for **claim 29**, Yang in view of Johnson discloses everything as above (see **claim 19**). In addition, Yang discloses each first structure has a first center of symmetry and each second structure has a second center of symmetry; wherein, the first center of symmetry and the second center of symmetry for each target are offset with respect to each other by a selected one of the predefined offsets (Fig. 24: 700, 702, 704).

As for **claim 30**, Yang in view of Johnson discloses everything as above (see **claim 19**). In addition, Yang discloses determining the overlay error without comparing the optical signals to calibration data (col. 16, lines 50-60).

As for **claim 31**, Yang in view of Johnson discloses everything as above (see **claim 19**). In addition, Yang discloses determining any overlay error between the first structures and the second structures using linear approximation based on the obtained spectra, linear based technique (Fig. 16: equation 8; col. 16, lines 40-50).

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19. **Claim 11** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Yang et al. (6,982,793)** in view of **Hignette et al. (5,191,393)**.

As for **claim 11**, Yang discloses everything as above (see **claim 2**). He is silent concerning using a Fourier transform. However, Hignette in an overlay measurement device teaches using a Fourier transform to determine overlay (col. 2, lines 65-67; col. 3, lines 1-5). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to use a Fourier transform in order to measure the amount of overlay inaccuracy.

20. **Claims 18 and 42** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yang et al. (6,982,793)** in view of **Niu et al. (6,699,624)**.

As for **claims 18 and 42**, Yang discloses everything as above (see **claim 38**). He does not explicitly state a phase based technique; he does disclose ellipsometry (Fig. 12b). And suggests imaging ellipsometry if multiple targets are to be measured simultaneously (Fig. 26a). However, Niu in an overlay metrology method teaches using phase in ellipsometry (col. 4, lines 65-67). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to use a phase-based technique such as ellipsometry in order to measure the profile of the gratings for overlay calculation.

21. **Claim 32** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Yang et al. (6,982,793)** in view of **Johnson et al. (5,388,909)** further in view of **Niu et al. (6,699,624)**.

As for **claim 32**, Yang in view of Johnson discloses everything as above (see **claim 19**). Yang does not explicitly state a phase based technique; he does disclose ellipsometry (Fig. 12b). And suggests imaging ellipsometry if multiple targets are to be measured simultaneously (Fig. 26a). However, Niu in an overlay metrology method teaches using phase in ellipsometry (col. 4,

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lines 65-67). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to use a phase-based technique such as ellipsometry in order to measure the profile of the gratings for overlay calculation.

Allowable Subject Matter

22. **Claims 3-5, 20-28** would be allowable if rewritten to overcome the rejection under 35 U.S.C. 101 and rewritten in independent form including all of the limitations of the rejected base claim and any intervening rejected claims.

As to **claim 3**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method for determining an overlay error the particular condition being met by the imaging optical system, in combination with the rest of the limitations of **claim 3**.

As to **claim 4**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method for determining an overlay error the particular condition being met by the imaging optical system, in combination with the rest of the limitations of **claims 4-5**.

As to **claim 20**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method for determining an overlay error the particular obtaining an intensity and combining steps, in combination with the rest of the limitations of **claims 20-28**.

Conclusion

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: U.S. Patent 6,819,426 to Sezginer et al.

U.S. 2005/0122516 to Sezginer et al.

The following are citations from IDS of May 16, 2005 that were crossed out by Examiner. The Examiner has corrected the pertinent pages of each publication:

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TDB, "Mask Overlay Determination," IBM Technical Disclosure Bulletin, December 1978, pp. 2772-2773. www.delphion.com

Kim, Young-Chang et al., "Automatic In-Situ Focus Monitor Using Line Shortening Effect," Journal: Proceedings of the SPIE, vol. 3677, pt. 1-2, pp. 184-193.

Sherman, Enrique R., "Characterization and Monitoring of Variable NA and Variable Coherence Capable Photo Steppers Utilizing the Phase Shift Focus Monitor Reticle," Journal: Proceedings of the SPIE, vol. 2439, pp. 61-69.

Bischoff, Jorg et al., "Modeling of Optical Scatterometry with Finite-Number-of-Periods Grating," Journal: Proceedings of the SPIE, vol. 3743, pp. 41-48.

Baumbach, T. et al., "Grazing Incidence Diffraction by Laterally Patterned Semiconductor Nanostructures," Journal: Journal of Physics, vol. 32, no. 6, pp. 726-740.

Uchida, Norio et al., "A Mask to Wafer Alignment and Gap Setting Method for X-Ray Lithography Using Gratings," Journal: Journal of Vacuum Science & Technology B, vol. 9, no. 6, pp. 3202-3206.

Ina, Hidecki et al., "Alignment Mark Optimization to Reduce Tool and Wafer-induced Shift for XTRA-1000," Japanese Journal of Applied Physics, vol. 38, no. 12B, pp. 7065-7070.

Fax/Telephone Numbers

If the applicant wishes to send a fax dealing with either a proposed amendment or a discussion with a phone interview, then the fax should:

- 1) Contain either a statement "DRAFT" or "PROPOSED AMENDMENT" on the fax cover sheet; and
- 2) Should be unsigned by the attorney or agent.

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This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

Papers related to the application may be submitted to Group 2800 by Fax transmission. Papers should be faxed to Group 2800 via the PTO Fax machine located in Crystal Plaza 4. The form of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Machine number is: (571) 273-8300

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon J. Stock whose telephone number is (571) 272-2431.

The examiner can normally be reached on Monday-Friday, 10:00 a.m. - 6:30 p.m.

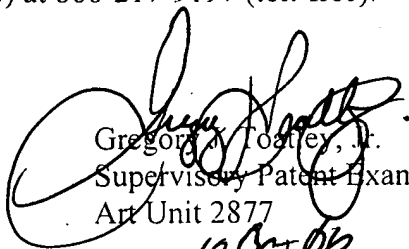
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr., can be reached at 571-272-2800 ext 77.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private Pair system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



gs

October 13, 2006



Gregory J. Toatley, Jr.
Supervisory Patent Examiner
Art Unit 2877
10 Oct 06